Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Whiting Oil and Gas Corporation
Well Name/Number: Salsbury 24-35-1H
Location: SE SW Section 35 T25N R57E
County: Richland **, MT; Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)
Long drilling time: No, 30 to 40 days drilling time.
Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a single lateral Bakken Formation horizontal well test to 20,919'MD/10,496'TVD.
Possible H2S gas production: H2S gas production possibility is slight (Mississippian Formations).
In/near Class I air quality area: No Class I air quality area in the area of review.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: No special concerns – using triple derrick drilling rig to drill a single lateral Bakken Formation horizontal well test to 20,919'MD/10,496'TVD. If existing pipeline for gas in the area, gas can be gathered or if no gathering system nearby, gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)
Salt/oil based mud: Yes, oil based invert (70/30) drilling fluids will be used on the mainhole. The horizontal lateral will be drilled with brine water. The surface hole will be drilled with freshwater and freshwater drilling fluids.
High water table: No, no high water table anticipated in the area of review.
Surface drainage leads to live water: No, nearest drainages are unnamed ephemeral tributary drainage to North Fork First Hay Creek, unnamed ephemeral tributary drainage to North Hay Creek, about ¾ of a mile to the east northeast and to Hay Creek, about 5/8 of a mile to the southwest from this location. Stock ponds are found about 1.125 miles to the northeast and about 5/8 of a mile to the southwest from this location.
Water well contamination: None, closest water wells are about ½ of a mile to the east, about ¾ of a mile to the east southeast, about ¾ of a mile to the west, about ¾ of a mile to the southwest and all other water wells are 1 mile and further from this location. Depth of these domestic/stock water wells range from 60' to 257'. Surface casing hole will be drilled with freshwater and freshwater drilling fluids. Surface casing will be run and cemented to surface from 2000'.
Porous/permeable soils: No, sandy clay soils.
Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:
X Lined reserve pit
X Adequate surface casing

__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____
Comments: __2000' of surface casing cemented to surface adequate to protect freshwater zones and to cover the base of the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, stream crossings anticipated.
High erosion potential: Yes, small cut, up to 3.9' and small fill, up to 3.2', required.
Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, a very large wellsite 510'X425' location size designed to accommodate 4 wells from this well pad, Salsbury 24-35-4H, Salsbury 24-35-3H, Salsbury 24-35-2H, **Salsbury 24-35-1H**.
Damage to improvements: No surface use is cultivated land.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access to location will be over existing State Highway #201. A short access of 165' will be built off the county road into location. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to an authorized Class II Disposal. Drilling cuttings and mud solids will be fly ashed in the lined pit and buried with subsoil cover. No special concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Nearest residences are about ¾ of a mile to the southeast, about 1 mile to the southwest and about 7/8 of a mile to the north from the location.
Possibility of H2S: H2S potential is slight (Mississippian Formations).
Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing and operational BOP should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: None
Conflict with game range/refuge management: None
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists one (1) species of concern. It is the Whooping Crane.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other: _____
Comments: The surface ownership is private cultivated land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites None identified.
Mitigation
__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____
Comments: On private cultivated surface land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desire to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: No concerns.

Remarks or Special Concerns for this site

A single lateral Bakken Formation horizontal well test to 20,919'MD/10,496'TVD. No concerns.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\ Steven Sasaki
(title:) Chief Field Inspector
Date: February 24, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Richland County
(subject discussed)
February 24, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Richland County
(subject discussed)

February 24, 2012
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T25N R57E
(subject discussed)

February 24, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: __ _____
Others present during inspection: _____ _____